The Fleur-De-Lis Abdominoplasty

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KEYWORDS

• Fleur-de-lis abdominoplasty • Vertical abdominoplasty • Abdominal contour abnormalities

KEY POINTS

- Vertical abdominoplasty is a safe and effective procedure to correct abdominal contour abnormalities in individuals with excessive soft tissue in both the vertical and transverse orientation.
- The literature, although limited, supports the effectiveness of this procedure in addressing this clinical scenario.
- The complication rates are comparable to a standard transverse abdominoplasty.

BACKGROUND

A difficult aspect of abdominal contouring is the management of patients with excessive epigastric laxity. Once a unique clinical entity, this patient presentation has been on the rise.[1–4] As more and more individuals undergo bariatric-assisted weight loss, the acuity and severity of the associated weight reduction results in patients who are burdened by a pendulous pannus, rashes in skin folds, and chronic skin irritation or breakdown.[4–7] Further, changes to skin elasticity prevent retraction of the skin envelope, often seen in individuals with less severe weight loss associated with diet and exercise.[8] Unlike the typical abdominoplasty patient who has excessive skin and fat in the vertical orientation with minimal redundancy in the transverse direction, individuals with massive weight loss have excessive laxity in both the vertical and transverse axes. A common misconception is that the excessive laxity in the transverse axis will resolve with redraping of the abdominoplasty flap in a standard procedure. However, this is often underpowered and fails to address the redundant tissue of the upper abdomen, does not improve contour to the hip and flank region or narrow the waist, and often leaves behind surgical dog-ears at the extent of the transverse incision.[2,6,9,10] Since its early description in 1967,[11] and subsequently popularized by Dellon in 1985,[12] the vertical abdominoplasty has remained a valuable tool in the armamentarium for body contour surgery. The inclusion of a vertical component to the resection pattern allows the surgeon the ability to directly excise the redundant soft tissue in the midline while simultaneously contouring the lateral hips and flank. Although there have been minor modifications to the classic description of the vertical abdominoplasty, the general principles of the procedure have stood the test of time.

To prevent both the patient and surgeon from being displeased with the outcome of an abdominal-contouring procedure, a comprehensive preoperative examination is essential to identify the degree of redundancy in the transverse axis. Further, this physical examination also identifies any preexisting abdominal scars that may potentially be excised within the vertical extension of the procedure.

PATIENT SELECTION

The ideal patient is often one who has undergone significant weight loss in a short period of time,[9]

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Clin Plastic Surg 41 (2014) 673–680
http://dx.doi.org/10.1016/j.cps.2014.07.007
0094-1298/14/$ – see front matter

manifests skin redundancy as a result of multiple pregnancies,[13] or has preexisting widened midline scars.[14] The speed and magnitude associated with massive weight loss secondary to bariatric procedures results in a moderate to severe excess of skin and epigastric laxity in the vertical and transverse axis. Further, the presence of preexisting abdominal scarring allows the surgeon an opportunity to revise (midline vertical scar) or completely remove the scar (eg, subcostal or port site).[14,15] However, as with all body-contouring procedures, the patient must be aware of the tradeoff of scar burden with effective contouring, and this procedure should be considered contraindicated in individuals who are unwilling to accept a midline vertical scar. Further, the additional scar poses concerns regarding wound healing in poor candidates. Care needs to be taken with individuals who have preexisting medical comorbidities, such as smoking, diabetes, immune compromise, and morbid obesity. The main concern regarding the vertical abdominoplasty is the potential for wound compromise at the intersection of the vertical and transverse extension of the resection margins, commonly referred to as the T-junction. In a prospective review of individuals with massive weight loss (more than 50-pound weight loss) undergoing abdominal-contouring procedures, 31% underwent a vertical component to the procedure.[3] There was a statistically significant difference ($P = .03$) in the number of men (18%) versus women (33%) who underwent this approach.

The preoperative assessment is broken down into 2 separate visits. In the initial visit, a thorough medical history and physical examination is conducted. Medical comorbidities pertinent to the procedure are documented both before and after the significant weight loss. The mechanism of weight loss is obtained, as is the highest, lowest, and current body mass index (BMI). The duration of the stability of the patient's current weight is noted, as is its deviation from the goal body weight. A physical examination noting the pattern and distribution of adipose tissue, the quality of the overlying skin, and the laxity of the surrounding soft tissue is performed. After consideration of all these factors in conjunction with the patient's own wishes and desires, a surgical recommendation is made. The patient is then given time to reflect on the surgical plan. As needed, the patient also has the opportunity to further reduce his or her BMI, trial topical therapies for persistent rashes, and stop tobacco use. The patient is brought back for a second consultation where any additional questions are answered and the informed consent is discussed at greater length. Potential complications are discussed, including injury or loss of the umbilicus, malposition of the umbilicus, numbness in the lower and midline abdomen, wound separation, skin loss, change in pubic hair shape and/or hair loss, abdominal tightness, prolonged pain, presence of surgical "dog-ears," contour irregularity, failure to relieve symptoms of back pain or rashes, seroma formation, visible scars in the vertical and horizontal position, and extension of the scar superiorly onto the chest.

SURGICAL TECHNIQUE

The initial approach to the vertical abdominoplasty is similar to that of the traditional procedure. The inferior incision is marked 6 cm cephalad from the anterior vulvar commissure with the tissues on stretch. A midline reference mark is placed extending from the sternum to the inferior incision. The right and left lateral extent of the skin roll is identified and the lateral extent of the excision is marked. This mark is placed on the apex of the lateral hip roll to prevent dog-ear formation in the subsequent closure. The preoperative marks at the midline and lateral extents are connected to form the full extent of the inferior incision (**Fig. 1**). In the population with massive weight loss, this mark is often inferior to the inguinal ligament lateral to the mons; however, with resection of the overhanging pannus, the final position of this scar is pulled to a more superior position as a result of tensile forces from the abdominal closure. A pinch

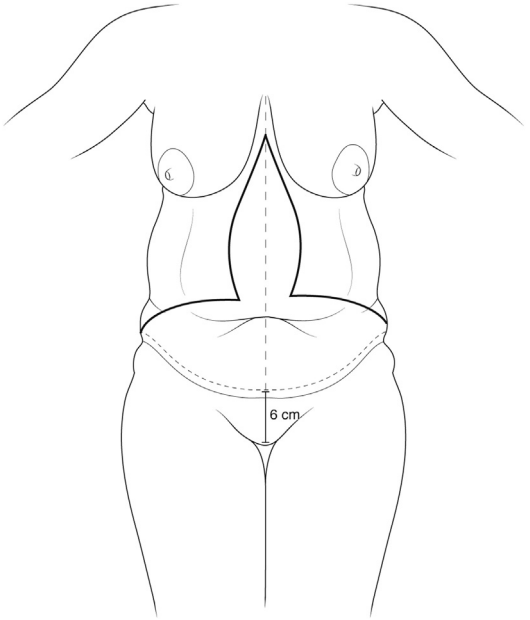

Fig. 1. Preoperative markings for the fleur-de-lis abdominoplasty. The area of resection is estimated and then confirmed during the procedure.